

crosses pelvis to be called pelvic colon
 - ends in front of 3rd piece of
 sacrum, loses mesentery, becomes
 rectum.

- in small intestine the outer
 longitudinal muscle in an even
 layer -

in large intestine in colon - muscle
 concentrated in 3 ribbons -
 each a taenia.

Ribbons - shorter than colon - 6 shorter -

- produces sacculations or bulges.

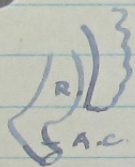
Rectum - beyond 3rd piece of sacrum

- length 5"

- followed curve of front of sacrum,
 goes down & forward - at floor of

- pelvis back at st. l. - name from
 anal canal 1 1/2" long.

- external opening anus



Liver - largest gland of body. 3 lb.

- large chemical factory

- storehouse for food materials.

- secretes bile.

position - in upper abdomen, under diaphragm
 & more to right than left.

- from R nipple to 11th rib.

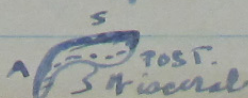
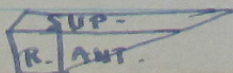
- molded by contacting structures

- shape changes.

- hardened liver - wedge - base to R.

& st. l. is rounded off.

ant view.



side view.

- diaphragmatic surface, in contact with diaphragm.
- visceral surface below & behind.

Attachments - held in place by folds of peritoneum, except posterior surface, in contact with diaphragm & base of peritoneum - bare peritoneum.

Fornix - falciform ligament - sickle-shaped fold of peritoneum, dividing r. lobe from l.

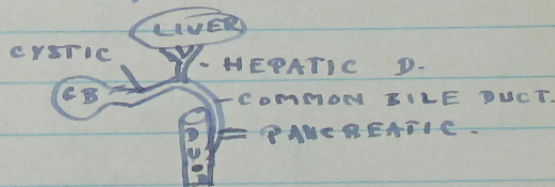
- r. lobe - larger.

visceral surface - inferior surface.

- large hollow for gall-bladder on under surface of r. lobe. - porta.

porta - ducts, leave & portal vein & hepatic artery enter.

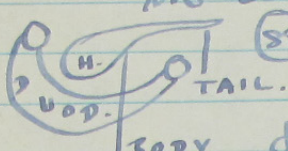
ducts - bile ducts carry bile from liver to duodenum. Carry it by way of gall-bladder.



Blood vessels -

- entering porta - ¹⁾ portal vein
 - drains blood from intestines & spleen
- ²⁾ hepatic artery
 - small artery to nourish liver.
- ³⁾ hepatic veins
 - drain out of liver on posterior surface into inferior vena cava.

Pancreas - a digestive gland, lying in curve of duodenum.

 (SP) - a double secretion
1) - pancreatic juice, secreted into common bile duct.
2) - insulin - discharged by blood vessels.

secretion by ducts - external.
" by veins - internal.

Spleen - in abdomen - size of small fist.
position - in upper left corner, under diaphragm, behind & l. of stomach.
under 11th rib.

- smooth curved lateral surface - against diaphragm.
- medial surface fitting stomach.
- covered by peritoneum, except where blood vessels enter.
- associated with blood.
- use - factory for some white cells.
- reservoir for extra blood.
- graveyard for dead blood cells.

Blood supply of digestive tube

3 big arteries from abdominal aorta.

1) celiac - supplies stomach, duodenum & liver, pancreas & spleen.

2) superior } mesenteric - run in mesenteries

below 3) inferior }
- supply remainder of tube.

- venous blood from intestines, drains by portal vein to liver & by hepatic veins to liver.
- blood from other organs in abdomen, as kidneys & wall of abdomen goes directly to inferior vena cava.

Respiratory System

- apparatus for carrying fresh air to lungs & removing waste gases from lungs.
- starts at nostrils, entrance to "nasal passages" - has floor - palate. anterior part - bony. posterior " - muscular & soft.

2) septum - vert. partition separating

r. from l. sides. In lateral wall are 3 fins of bone - called turbinates - sup. middle, inf.

Increased surface of nasal passages. lateral to nasal passage in cupboard in skull - antrum & sinus.



Maxillary sinus

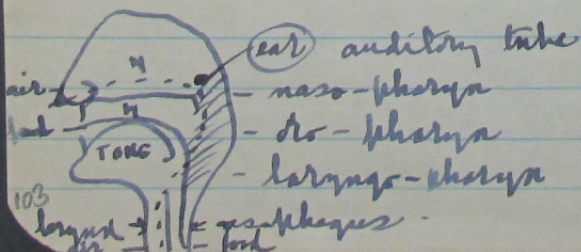
Nasal passage lined with moist mucosa, continuous with lining of antrum.

Warmed & moistened.

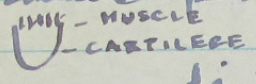
Nasal passage & sinuses act as resonators.

3) pharynx -

situation - behind nose & mouth.

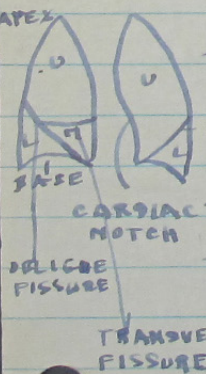


- Pharynx - cross-road for food & air.
 - tonsils & adenoids (filters for bacteria)
- Larynx - air-passage right below & in front of pharynx - voice-box.
 - consists of several cartilages & a pair vocal chords.

- 4) Trachea - tube in front of esophagus to conduct through neck into chest.
 - $4\frac{1}{2}$ " long. Collapse prevented by horizontal plates of cartilage in wall.
- 
- At lower end, trachea divides into 2 bronchi - each leads to respective lung, dividing into smaller branches called bronchioles.

- Bronchus - structure like trachea - only - cartilages in plates.
 - looks like tree.

Right bronchus more vertical than left.

- 5) Lungs - situated in thoracic cavity r. & l.
 - heart between them - diaphragm below.
 - protected by bony thorax, by ribs, sternum & thoracic vertebrae.
 - conical in shape.
- 
- upper - open bottom - base.
 - medial & mediastinal surface towards heart.
 - costal surface towards ribs.
 - cardiac notch in left lung.
 - in lobes by fissures.

- Lung - frothed tissue - fine spongywork.
- multitude of air-sacs (alveoli)
 - have thin walls + networks of capillaries - increased by lung tissue.
 - wall so thin there is free exchange of gases.
 - 70 sq. metres - lung tissue.
 - normal breath - 1 qt. full inspiration - 5 qt.

- Pleura - membrane covering lung.
- double-walled sac - covering lung called visceral pleura.
 - lining chest wall - parietal pleura + outer surface of diaphragm - continuous at root of lung, where air-passages enter on mediastinal surface.
 - moist to prevent friction.
 - if inflamed - pleurisy - dry & moist.

- Diaphragm - partition as a muscular sheath making floor of thorax & roof of abdomen. Attached to ribs, ^{costal} inside costal margin & to front of lumbar vertebrae - is dome-shaped.
- Diagram of Diaphragm:
-
- a central tendon - a fibrous non-contractile sheath.

Periphery is fleshy - attached by fleshy attachments.

- Diaphragm When diaphragm contracts it descends & reduces pressure in thorax to suck in air & increases abdominal pressure.

- In inspiration diaphragm rises
 - impulse faeces from rectum.
 - " fetus from uterus.
- 3 openings - inferior vena cava.
 - esophagus
 - aorta.

Excretory organs - to remove waste products.

Lungs - excrete waste gas.

skin - water & drugs.

Digestive canal -

urinary system - excretes urine.

function of kidneys - extract certain wastes from blood & discharge them as liquid urine.

- kidneys paired.

- $4\frac{1}{2}$ " long - $4\frac{1}{2}$ oz. wt.

- position - on posterior abdominal wall, upper end covered by 12th rib.

- behind peritoneum & bedded in fat.

- shape - oval, like a kidney bean.

- notch on medial side.



SINUS

- hilum - where blood vessels enter + leave + ureter leaves.

- outside covered by fibrous capsule, for protection.

internal structure

- meaty, kidney substance towards surface, with hollow adjacent to hilum - called sinus.

- kidney substance is mass of fine tubules + blood vessels. Tubules extract urine from the blood. Are arranged in pyramids.

Urinary tract.

kidneys
ureters
urinary bladder
within within

Each ~~tubercle~~^{ules} - a tip or papilla.

- papilla points towards sinus.

- tubercles - essential part of kidney.

- 2" long, 1 million to each kidney.

- urine drops from each papilla

Ureters - duct from each kidney to urinary bladder.

- upper expanded end is pelvis of ureter (in renal sinus, has several branches each called a calyx (ces))

- each calyx embraces 1 or 2 papillae

- ureter - 10" long.

- connects a kidney above with urinary bladder below.

- lies on posterior wall of abdomen & ends in the pelvis.

- each enters back of bladder

Blood supply of kidney.

- renal artery & vein (purest blood in body)

- each artery - large & from the aorta, veins draining into inferior vena cava.

- blood supply rich & vessels large.

Urinary bladder.

- reservoir for storing urine.

- hollow muscular bag.

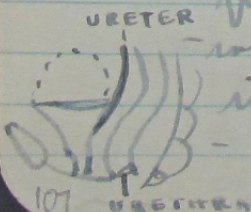
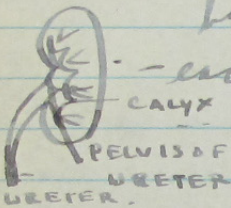
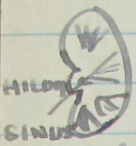
- position - front of pelvis.

- just behind pubic bones.

- when empty, contracted & flat on floor of pelvis.

- when full - upper end balloons into abdomen.

- capacity - 1 pt to 1 qt.



3 openings.

urters enter at posterior lateral corners

urethra leaves inferiorly.

- shape like bow of ship

- walls muscular + elastic.

- exit into urethra controlled by ring of muscle - sphincter.

Urethra - muscular discharge tube from inferior part of bladder to floor of pelvis to surface of body.
Male longer than female.
sphincter muscle - voluntary.

Female Genitalia

position - lower part of pelvis

- covered by peritoneum, reflected onto side walls (broad ligament of uterus)

ovary - gland where egg cells produced.

- larger than sperm.

- produced in ovary - large almond, r. + l.

- when ripe ovum bursts through ovary + picked up by uterine tube.
(Fallopian tube)

Uterine - tube conducts ovum to uterus -

tube 4" long, hair width.

- near ovary expanded end to pick up ovum - other end into cavity of uterus.

Uterus - about size + shape of small pear,

- makes nest for developing fetus.

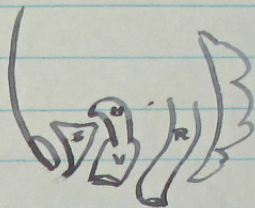
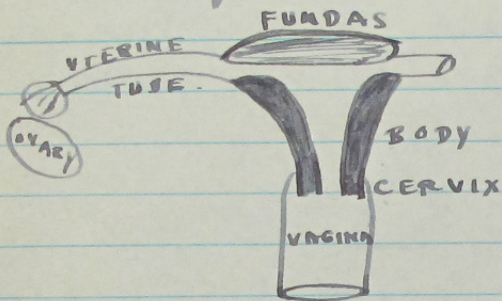
parts - upper part - fundus.

lower neck - cervix

body - in between.

Cavity - Δ open towards cervix.
2 openings into fundus, one for each
uterine tube - with opening at cervix,
leading into vagina.

Vagina - canal about 3" long
- from cervix to surface of body.



Nervous System

Structure - function - control of all body activity - receives sensations & gives orders.

- partly under control of will

3 main parts - central nervous system
(brain + spinal cord)

2) peripheral nervous system
(the nerves) cranial nerves
spinal nerves.

3) autonomic nervous system
atic - internal organs

Brain - controls nervous system (centre)

- located in cranial cavity of skull (notes)

- well protected by bones of skull + membranes - meninges + the by cerebro-spinal fluid.



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